

2020 Census Program Management Review

2013 Census Test Report

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Outline

Review of Study Objectives and Design
Execution of Case Management Treatments
Operational Takeaways
Results
Lessons from Test Experience

Study Objectives

- An operational study of NRFU procedures
- Use administrative records to “enumerate” some housing units
- Try an adaptive design approach for cases not enumerated with records and compare with fixed approach
- Examine two telephone methods
- Reduced number of contact attempts from 2010
- Secondary objectives: Examine cost and data quality across treatments

Sample

- Two matched sets of block groups in the Philadelphia area
- Block groups randomly assigned to adaptive or fixed case management approaches
- 2000 sample housing units selected from a universe of 2010 NRFU HHs within these block groups
- 1000 housing units for adaptive and 1000 for fixed case management treatments

2013 Census Test Design

	Adaptive Design	Fixed
ADRECs used for “enumeration”	<p>N=528</p> <ul style="list-style-type: none"> -Use administrative records to enumerate before field -CATI telephone -Max in-person Contacts 3 -Model determines cases worked 	<p>N=511</p> <ul style="list-style-type: none"> -Use administrative records to enumerate before field -Decentralized telephone -Max in-person Contacts 3 -FRs determine cases worked
ADRECs not used for “enumeration”	<p>N=528</p> <ul style="list-style-type: none"> -Use administrative records to inform business rules -CATI telephone -1 or 3 contacts -Model determines cases worked 	<p>N=510</p> <ul style="list-style-type: none"> -No use of administrative records -Decentralized telephone -Max in-person Contacts 3 -FRs determine cases worked

Operational Questions

- Can we determine vacant/demolished housing units and enumerate occupied sample units using administrative records?
- Alternatively, can we use records to determine the number of contacts for occupied sample units?
- Can we use response propensity models to score open cases?
- Can our systems use model outcomes to dynamically prioritize cases and communicate priorities to interviewers?
- Can we develop training and supervisory procedures that induce interviewers to adhere to study protocols?
- Can we link telephone numbers to sample lines?
- Can we use centralized and dispersed phone calls to enumerate sample units?
- How well can we enumerate households using these techniques with a reduced number of contact attempts?

Administrative Records

Operational Lessons

- Successfully used records and USPS information to remove cases from the workload
- Successfully used records to designate cases for one or three contacts
- Record information on occupancy shows strong relationship to interview data
- Pursuing further research on how best to identify vacant and occupied households with records
- Pursuing further investigation on how best to use USPS information

Adaptive Design

Operational Lessons

- Response propensity models, using 2010 data and Contact History Information can score open cases daily.
- Systems can then dynamically assign cases based on propensity scores.
- Automated daily case assignment is unprecedented.
- Issues identified during the Test:
 - Response propensity models need further scrutiny and testing to ensure effectiveness
 - Geographic location of cases needs to be integrated into prioritized case assignments
 - More research on models and rules for handling vacant households and “deletes” is needed
 - More research on models and rules for obtaining proxy responses is needed
 - More research on daily case assignments for enumerators is needed

CAPI Field Performance Operational Lessons

- Interviewers generally were trained to follow novel procedures
- Daily transmission to transfer completed cases and obtain new workload was largely achieved
- Routine completion of contact history information was largely achieved
- Handling cases on the last contact was more problematic – “personal visit/proxy” rule
- Supervision must focus on interviewers following case procedures
- Incentivize interviewers to adhere to procedures
- Experienced Census interviewers pose challenges

Telephone Operational Lessons

- Appended up to 3 landline and cell numbers from seven commercial sources to sample units
- “Cleaned” landline numbers
- Matched at least 1 number to 70% of sample units
- CATI (Tucson) employed for up to two weeks prior to face-to-face attempts in adaptive design panels
- Individual interviewers instructed to call each number twice before face-to-face attempts in fixed panels

Results:

Use of Telephone to Enumerate Households

- CATI: completed 27 interviews before face-to-face attempts
- Individual FR calls: completed 15 interviews before face-to-face attempts
- Issues for further scrutiny:
 - Quality of phone numbers
 - CATI field period and calling protocol
 - Handling multiple numbers per sample unit
 - Individual FR phone call compliance and methods

Results:

Case Dispositions

Treatment	Total Cases	Cases w Adrec Info	Cases removed w Adrec Info	Cases Completed	Cases w Max Attempts	Max Attempt Cases w Adrec Info	Max Attempt Cases w No Data
Fixed – Records Used to Reduce Workload	511	200	200	253	58	N/A	58
Fixed	510	181	N/A	388	122	42	80
Adaptive – Records Used to Reduce Workload	528	208	208	266	54	N/A	54
Adaptive	528	223	N/A	417	111	58	53
Total	2077	812	408	1324	345	100	245

A Closer Look at Cases with No Data

UAA Reason Code	# Stopped Cases with No Data
No UAA	234
Attempted, not known	3
Not deliverable as addressed	3
Vacant	5
Total	245

Contact History Indicators	# Stopped Cases with No Data
Only noncontacts with sample unit member	168
At least one contact with sample unit member	77
Refusal 1 or more times	71
Language barrier/Other	6
Total	245

- Mail information (UAA) suggests 11 of the cases may be vacant
- Contact History data: interviewers made contact with 77 cases, of which 71 were refusals

Results:

Productivity Using Adrecs to Reduce Workload

- Interviewers were approximately 20% less efficient when workload was reduced with records
- Cases remaining after workload is reduced are more difficult
- But interviewers spent approximately 22% fewer hours
- Overall interviewer cost is reduced

Results:

Productivity Using Adaptive Case Management

- Interviewers were 22% more efficient in the adaptive design treatments
- This pattern holds whether workload was reduced with records or not
- Interviewers in the adaptive groups averaged approximately four more contacts per interviewer/day

Results:

Productivity Using CATI before CAPI

- CATI implementation before CAPI led to 12-14% decrease in productivity
- Combines CATI and CAPI hours
- Productivity =
$$(\text{CATI hours} + \text{CAPI hours}) / \text{Number of cases}$$

Lessons from 2013 Test

- The test provided useful information on operation of new methods in difficult field conditions
- Suggests that some new methods are feasible and have promise
- Identified issues that need to be addressed to make methods more effective
- Provides a foundation for subsequent Census tests